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Climate and environmental reconstructions of bolshezemelskaya tundra based on subfossil cladocera remains from kotovo lake (Kharbey system)

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Abstract

© SGEM2017. All Rights Reserved. The aim of the study was the analysis of subfossil Cladocera community of the Kotovo lake (Kharbey lakes' system, Bolshezemelskaya tundra) and the qualitative rating of the changes in it and in the region of study. The relevance of the work is associated with the increasing interest to the study of the climate change on the example of the North intact territories, along with the insufficient knowledge of the biota of the area being studied. The predominance of some species, zoogeography and biotopic attachments of identified taxa, shifts in qualitative consist of subfossil Cladocera taxocenoses, which took place during the lake evolution, were revealed in frames of the investigation. In the consist of Kotovo lake 17 taxa of subfossil Cladocera community were registered. The greatest number of the identified taxa refers to the Chydoridae family, while the representatives of the Daphniidae and Bosminidae families are found in smaller quantities. The lack of the obvious dominants in Cladocera community was established by using Lubarsky scale, subdominants are represented by Chydorus cf. sphaericus, Alona affinis and Bosmina (Eubosmina) sp. In the column of lake bottom sediments the change of the predominant species was registered: previously prevalent representatives of the genus Alona were replaced by Chydorus cf. sphaericus. The reconstruction of the climatic and environmental conditions of the geological past of the region being studied were produced according to the received results; and the changes in environmental conditions were matched with a particular period of geological time. Subfossil Cladocera taxonomic diversity of the lakes Kotovo and Bolshoy Kharbey (largest lake of Kharbey system) was compared. The comparative analysis of the modern structure of the Cladocera from the lakes of the Kharbey system with remains of Cladocera from bental sediments was carried out. The analysis of the received results indicates the eutrophication of the lake, the expansion of the littoral zone and reflects the climate warming.

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Keywords

Bolshezemelskaya tundra, Cladocera, Kharbey lakes, Paleoecology

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